







ISU VDL's Role in HPAI Response Rodger Main, DVM, PhD **Professor & Director** ISU VDL















ISU VDL Veterinary Diagnostic Laboratory College of Veterinary Medicine • Iowa State University



ISU-VDL is part of the ISU College of Vet Med







ISU-VDL → Who We Are Today

- Total ≈ 135 People
 - 25 Faculty
 - 110 Technical Staff
- Full Service &
 Fully Accredited Laboratory
- Veterinary Diagnostic Medicine
 - Pathology
 - Virology and Molecular Dx
 - Bacteriology
 - Serology/Immunology
 - Toxicology & Nutrition
 - PhAST (Clinical Pharmacology)
 - Epidemiology
 - IT





Preeminent Food Animal Veterinary Diagnostic Laboratory

Comprehensive Diagnostic Service, Teaching, and Applied Research

- <u>Create</u> = New Knowledge & Capabilities
- <u>Share</u> = Students, Practitioners, & Stakeholders
- Apply = Providing World Class Diagnostic Services

Processing > 70,000 cases/year from livestock producers Applying world-class technology to solve real-world problems



Serving Food Animal Agriculture

Comprehensive Diagnostic Service, Teaching, and Discovery

(Iowa's only Full-Service & Fully Accredited Veterinary Diagnostic Laboratory)



















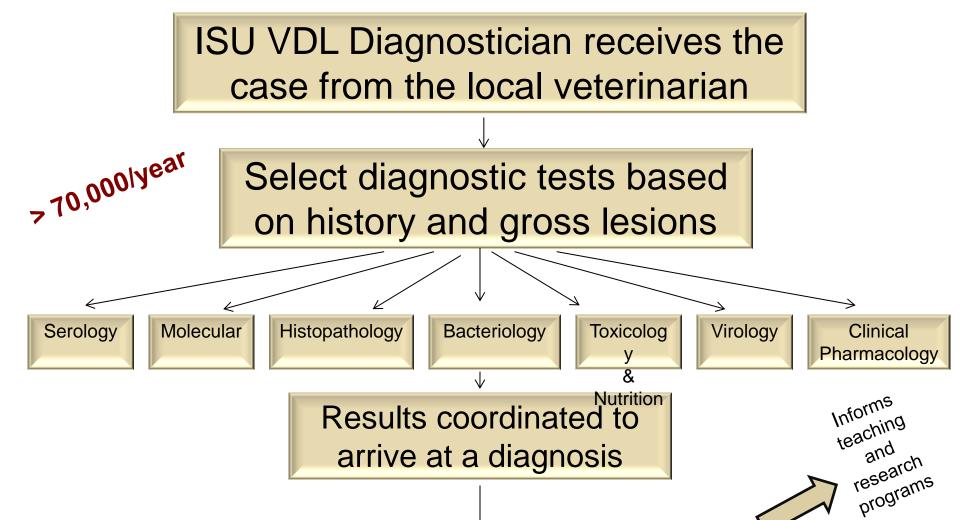




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12009 9:15:06 AM	2009009291	09H3976 H296290	25U Vet Path	Dr. Joseph Haynes	Chaig Bishop	New Care	I
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1/2009 B/S1/34 AM	2009007957	Trai 3 - Aut 416-43-74-5122	1SU Ver. Path	Dr. Claire Andreasen	Chicken Salmonella Project	New Case	1
1/2009 3:09:02 PM	2009007572	Trial 3 - Acro 416-43-74-5122	ISU Vec Path	Dr. Caire Andressen	Chicken Salmonella Project	New Case	8
12009 8/59/09 AM	2009007844	09H3630 H296250	ISU Vet Path	Dr. Brandon Plattner	Mike or Judy Sheam	Ordered Text	1
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1009 833:38 AM	2009007345	09H2546 Kentong 296284	1SU Vec Park	Dr. Jasse Homether	Jack Aleff	Ordered Text	1
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1009 14123 PM	2009007120	09H3465 Txc635059	ISU Vet Path	Dr. Jesse Hometter	CardiCulver	Ordered Text	1
12009 4:30:01 PM	2009006849	094146553039	ISU Vet Path	Dr. Jesse Honsmar	Carol Culver	Closed Case	0
2009 9-09-06 AM	20090676	Trial 2 - Acct 416-43-74-5122	25U Vet Park	Dr. Caire Andressen	Choken Salmonella Project	Pelminary Result	1
2009 1-59:12 PM	2009006196	Trial 2 (6/14/643-74-5)22)	ISU Vet Path	Dr. Claire Andressen	Chicken Salmonella Project	Closed Case	1
2009 1:55:53 PM	2090915	7(4/2 (6/14)5-43-74-5122)	ISU Vet Path	Dr. Caire Andressen	Chicken Salmonella Project	Closed Case	1
3009 \$-21-42 AM	2009006103	09H652 Sponseler 295994	ISU Vet Path	Dr David Garda-Tapia	Clark Timber Deek Farms	Closed Case	1
2009 12:37:29 PM	2009004988	7/e/2 - Acc 416-43-74-5122	250 Vet Path	Dr. Caire Andressen	Chicken Salmonella Project	Closed Care	1
2009 11:46:52 AM	2009004534	Trial 40 (Fund 416-45-74-5122)	1SU Vet Path	Dr. Claire Andreasen	Chicken Salmonella Project	Closed Case	1
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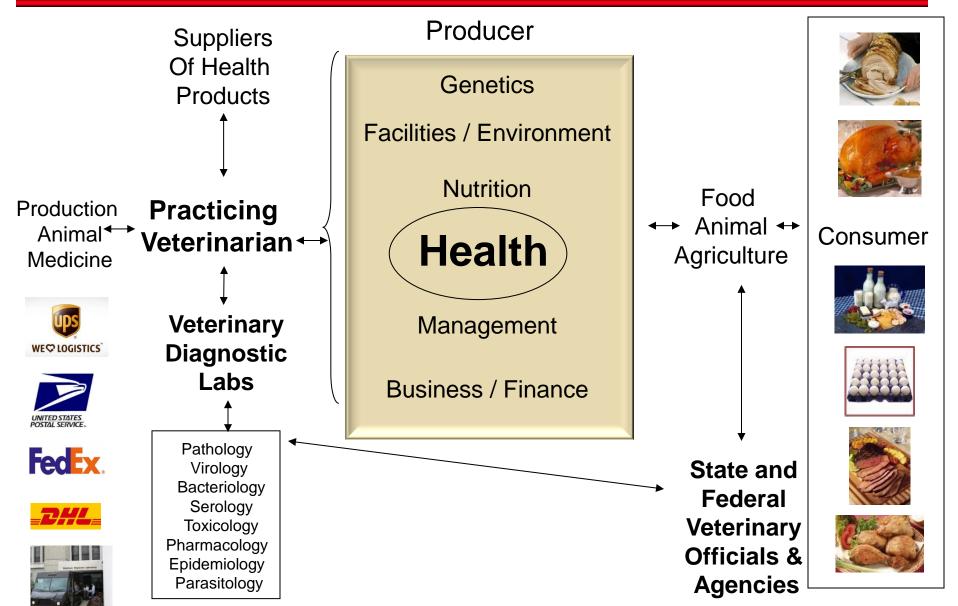
Processing > 70,000 cases/year from livestock producers for across US

Applying world-class technology to solve real-world problems



Transmit diagnosis to and assist local veterinarian with intervention strategies and establishment of best practices

Network of Interdependent Relationships to Improve & Protect Food Animal Agriculture



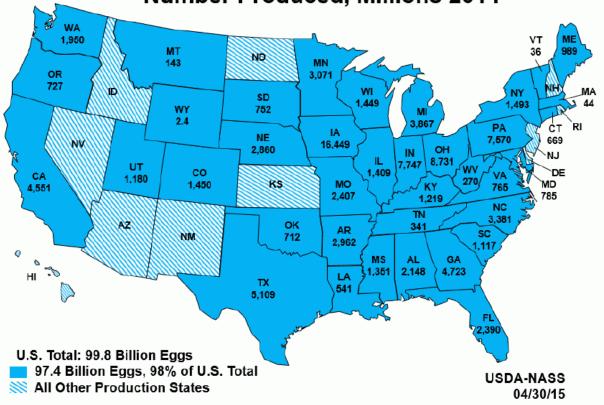
<u>Strategic Alliances → Service, Innovation, & Teaching</u>







Annual Egg Production by States Number Produced, Millions 2014



Iowa = Top Egg Producing State in US (16.5% of US Production)
≈ 60 Million Layers & 16.5 Billion Eggs prior to HPAI

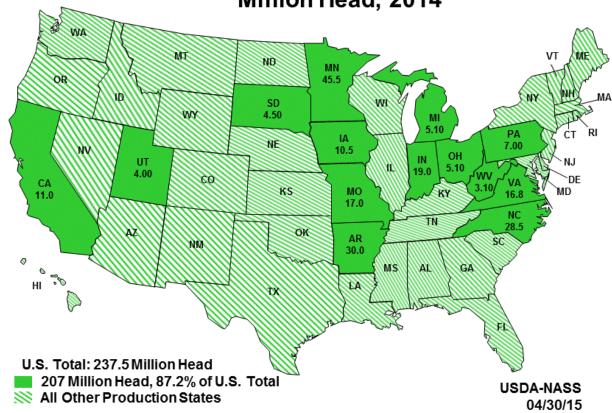






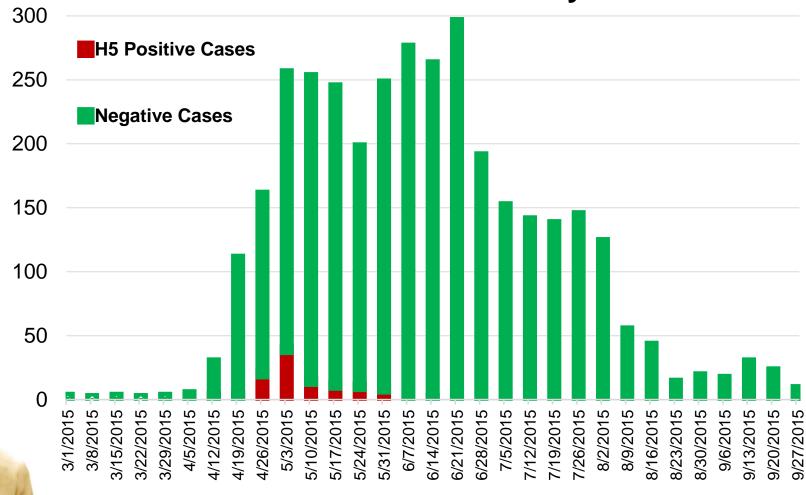


Turkeys: Number Raised by State Million Head, 2014



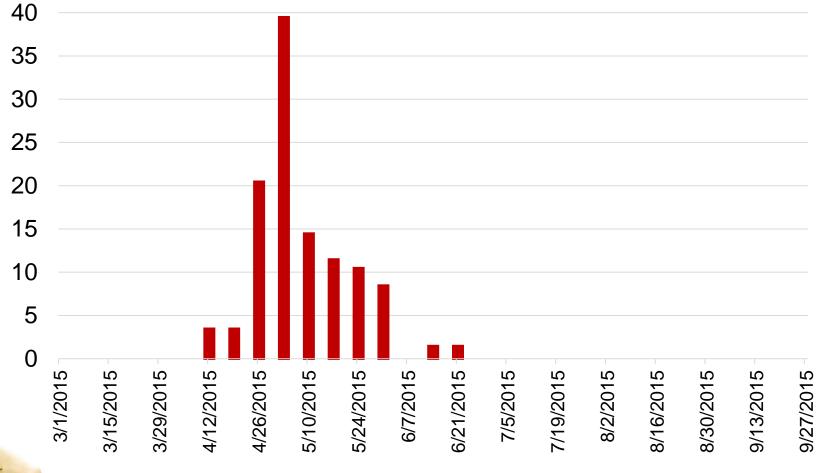
Iowa: Ranks 8th among States for Turkey Production Produces ≈ 10.5 Million/Year and Processes ≈ 13.5 Million/Year

ISU VDL AIV PCR Cases by Week





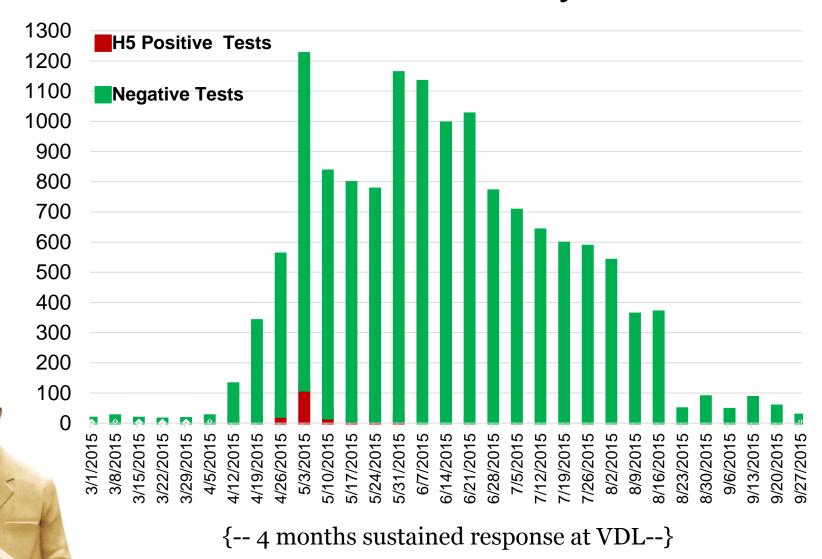
ISU VDL AIV H5 Positive Cases by Week



{10 week HPAI Outbreak in IA}

Diagnostic Case Submissions ≠ Number of Infected Premises

ISU VDL AIV PCR Tests by Week









Summary HPAI Infected Premises

- 35 Commercial Turkey Farms
- 22 Commercial Table Egg Layer Farms
- 13 Commercial Table Egg Pullet Farms
- 1 Commercial Breeder Flock
- 5 Backyard Producers
- 1 Commercial Mail Order Breeder Operation



Total = 77 HPAI Infected Premises



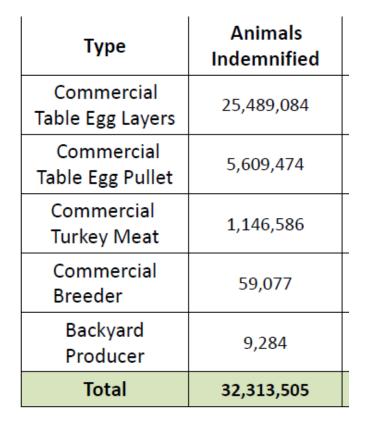
Data courtesy of:
Dr. David Schmitt, State Veterinarian
Iowa Department of Agriculture and Land Stewardship



2015 Iowa Affected Poultry













Data courtesy of:

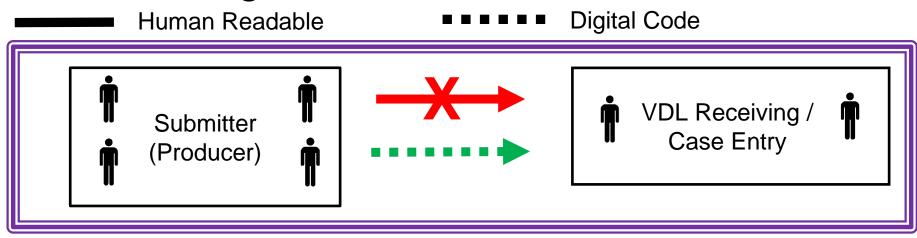
Dr. David Schmitt, State Veterinarian lowa Department of Agriculture and Land Stewardship

What could VDL improve its role in support HPAI preparedness / response ?

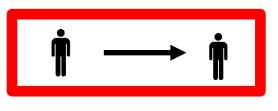
Early Detection, Rapid Response, & Effective Communication (Seamless, Timely, Clear)

- ☑ Competency of Personnel & VDL Systems
- ☑ Quality of Test & Results
- ☑ Sensitivity of Assay
- ☑ Testing Capacity
- ☑ Turn-around Time
- Quality of Information in VDL Record
 - Complete, Consistent, Traceable, Fit for Digital Transmission

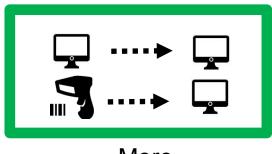
AIV Diagnostic Record Information Flow



- Premises Level Data On VDL Submission Form ····➤ Case Entry
 - Completeness
 - Consistency
 - Traceability
 - Connectivity



Less



More

Goal = 100% of Iowa Commercial Poultry Clients Digital by March 1, 2016



Yuko Sato Poultry Diagnostician

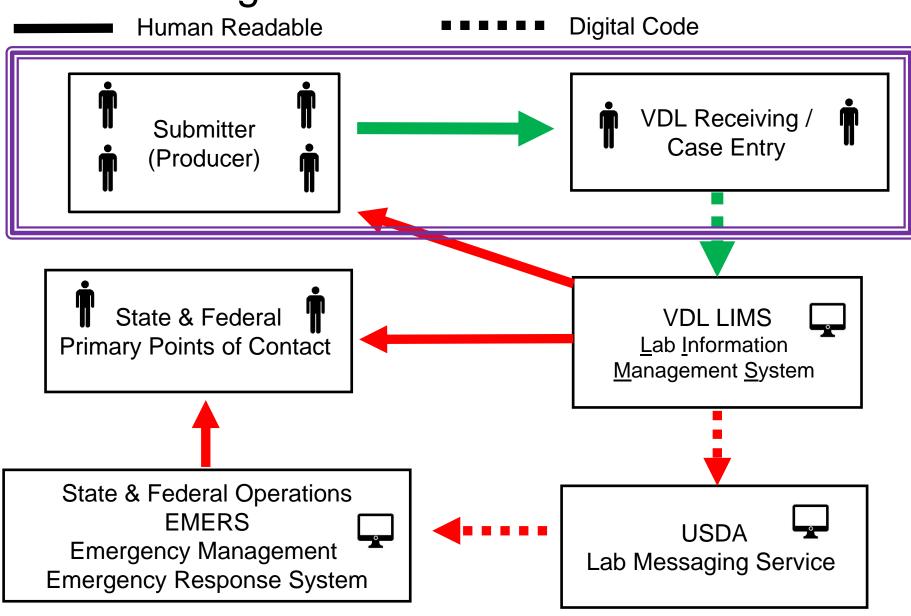


Katie Woodard Client Outreach/Education



Wendy Stensland NAHLN Program Mgr

AIV Diagnostic Record Information Flow



5 W's = Who, What, When, Where, and Why

Sustained responses to large-scale emerging disease events:

"Life Is Not A Drill"





Achieving Stakeholder Expectations

- Competent VDL Personnel & Infrastructure
- Quality Assays & Test Results
- Turn-Around-Time (Same Day/Overnight)
- Electronic Distribution of Results
- Cost Effective Service
- Sustain Continuity and Protect Their Business









ISU VDL's Role in HPAI Response

Questions?

Rodger Main, DVM, PhD Professor & Director ISU VDL













